U.S. ARMY CHEMICAL MATERIALS AGENCY

MONTHLY UPDATE

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DESERET CHEMICAL DEPOT | Oct. 26, 2009

The results are in

Sampling data will support GA/Lewisite disposal process details

The Battelle Hazardous Materials Research Center has completed analysis of samples from Deseret Chemical Depot's (DCD's) stockpile of GA nerve and Lewisite blister agent ton containers (TCs). The results will be used for design and permitting activities in support of the thermal destruction of the GA and Lewisite in a small-scale liquid incinerator (LIC) located within DCD's storage area.

Because mercuric chloride was used as a catalyst in Lewisite production, lab technicians were not surprised to identify some mercury in the Lewisite. But they didn't expect to find so much in the layers of solid, sludge-like material that has settled inside the TCs. The solids have never been sampled before and analysis shows 13 to 42 percent of it is mercury. "We never thought we would have anything to that level." explains GA/Lewisite Project Manager Jim Clark. Additionally, as a principle component of Lewisite, high levels of arsenic were confirmed.

Sampling results show that the Lewisite TCs contain different concentrations of mercury, and operators will need to control the rate at which agent is fed into furnace. The small-scale LIC will be equipped with a specially designed pollution abatement and filtration system to cool and clean the exhaust gases, and to remove remaining particulates and metals like arsenic and mercury.

Workers will first drain the agent from the TC and send it to a storage collection tank. The solids will then be dissolved by filling the TC with 100 gallons of nitric acid and rotating the container to liquefy the contents. The remaining liquid will be pumped through a diffusion dialysis unit, which uses water to separate the metals from the nitric acid. The recovered nitric acid

(*See* GA/LEWISITE *on page 2*)

Lab technicians prepare samples of GA nerve agent (left) and Lewisite blister agent (right) for analysis at the Battelle Hazardous Materials Research Center.

Two hats for DCD Commander

Colonel Gladney re-appointed to past post; will also remain at DCD

Colonel Gerald L. Gladney is doing double duty, recently being appointed as the Acting Director of Stockpile Operations (DOSO) while still in command of DCD.

The DOSO oversees the storage of chemical agent-filled munitions at all of the U.S. Army stockpiles and has agent accountability responsibilities. It's a job that Col. Gladney is familiar with—it's the position he held before coming to DCD.

The recent appointment by the director of the U.S. Army Chemical Materials Agency (CMA), Conrad Whyne, requires Col. Gladney to travel to CMA headquarters in Aberdeen, Maryland more often. But he feels the support he has in both locations makes it all possible.

"I am very fortunate to have good teams at both ends [DCD and CMA headquarters] to be able to run both," Col. Gladney told members of the Utah Citizens' Advisory Commission at their September meeting. "And I am grateful that Mr. Whyne has the faith and confidence in me to be able to pull this off."

Col. Gladney said he plans on taking his role as the DOSO even further, mentoring commanders at the other stockpile sites in anyway needed.

TOCDF working out kinks in new filtration system

Two sets of leaking valves have thrown a wrench in the startup of the new $33 million Pollution Abatement System (PAS) Filtration System (PFS). The first was discovered Oct. 14, just a few hours after the first high-mercury ton container began processing. Two valves, located in piping that is connected to the metal parts furnace (MPF) PFS but is no longer in use, allowed exhaust gas to bypass the new carbon filtration system, causing a MACT mercury exceedance of 190 µg/DSCM. The TOCDF's threshold is 130 µg/DSCM every 12 hours. Processing was suspended immediately until the problem was identified and corrected.

When these faulty valves were sealed off, however, TOCDF officials noticed mercury readings measured downstream of the PFS were higher than those measured mid-bed, indicating there was still a leak. Though the mercury emissions from the second leak were well within the TOCDF's established thresholds, complying with all federal, state and

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GA/Lewisite

(Continued from front page)

will be used to dissolve sludge in another TC and the remaining watery effluent will be safely shipped off site for disposal.

Each empty Lewisite TC will be rinsed three times; each time, rotating the TC for an hour with 100 gallons of water inside. The water will be drained and incinerated in the secondary chamber of the LIC.

An assessment of the GA nerve agent samples provided data consistent with previous analytical results. These containers will be drained directly into the LIC's primary chamber. Sodium hydroxide will be used to clean the containers, followed by a triple water rinse.

Following the destruction of the GA nerve and Lewisite blister agent, the empty containers will be disposed of in accordance with hazardous waste regulatory requirements.

The sampling project also included the depot's so-called "transparency" TCs—these containers were thought to be empty or contain Lewisite residue. Results confirmed no agent or agent residue in the small stockpile of transparency TCs, with the exception of one that was not sampled due to a defective sample tube. Thus, the contents of this container could not be confirmed and it will be processed with the other Lewisite containers. The remaining transparency TCs will be processed as secondary waste, each cut in half, cleaned and shipped to a hazardous waste landfill.

Final design and planning activities continue as TOCDF officials prepare the class 3 permit modification request for construction and operations of the small-scale LIC. Construction is scheduled to begin this fall and will continue through summer 2010. Destruction operations are expected to be completed in time to meet the April 2012 Chemical Weapons Convention Treaty deadline.

U.S. destroys more than two million munitions

The U.S. Army's CMA announced the safe destruction of its two millionth munition since the international Chemical Weapons Convention treaty entered into force. This is a major achievement for CMA and demonstrates the expertise and commitment of its work force.

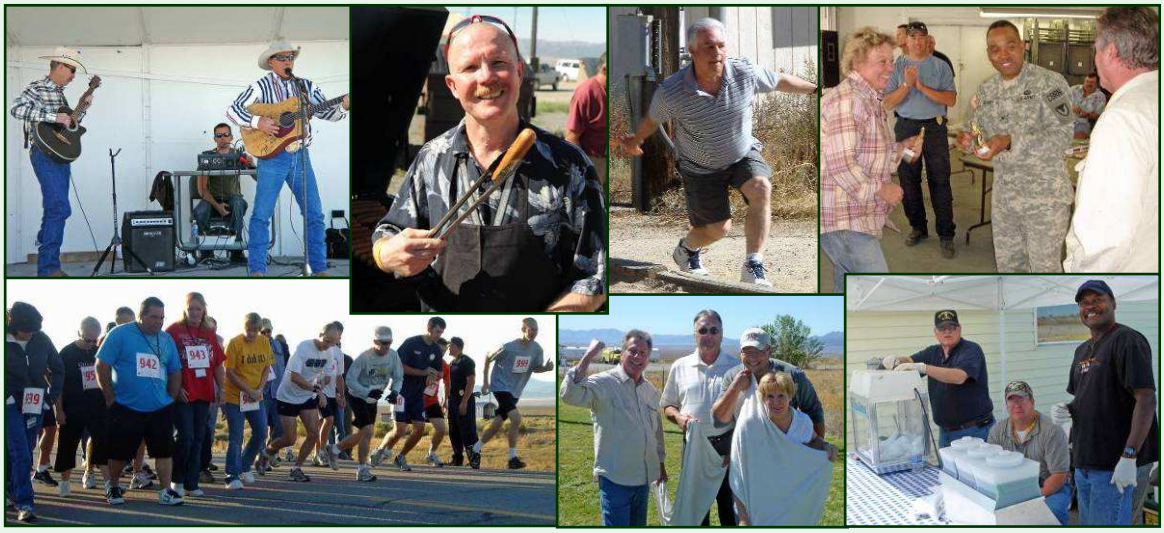
While this milestone only includes weapons destroyed since entry into force, more than half have been destroyed at the TOCDF. "The dedication and expertise of Army civilians at DCD working in partnership with the EG&G work force at the TOCDF was critical to reaching this point in chemical weapons destruction history," said Col. Gerald L. Gladney, Acting CMA Director of Stockpile Operations and DCD commander.

CMA's four remaining destruction sites are on pace to complete operations in time to meet the 2012 CWC deadline. CMA continues to safely store chemical agent munitions near Richmond, Ky., and Pueblo, Colo.; the Assembled Chemical Weapons Alternatives Program is responsible for the destruction of those stockpiles.

Tooele Chemical Agent Disposal Facility Processing

(as of Oct. 25, 2009)

Total number of mustard agent-filled bulk containers destroyed	4,265
Total number of mustard agent-filled 155mm projectiles destroyed	54,453
Total number of mustard agent-filled 4.2-inch mortars destroyed	336
Percentage of total mustard agent stockpile destroyed	66.49%



Deseret Chemical Depot held its annual employee appreciation day to thank them for their hard work and dedication. A fun-filled day of various activities allowed workers to enjoy each other's company in a light-hearted atmosphere.

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Construction of the TOCDF Pollution Abatement System Filtration System is complete and a series of planned performance tests are now underway. Each of the three massive filter units measure nearly 60 feet long and weigh more than 35 tons. They contain a pre-filter, a High Efficiency Particulate Air (HEPA) filter, four carbon filters and a final HEPA filter.

Filter system

(Continued from front page)

local standards, TOCDF officials replaced the suspect valve to ensure all MPF exhaust gases flow through the carbon filtration system, which is designed to capture the mercury from contaminated exhaust gases.

The PFS consists of three separate filter units—one for the MPF and one for each liquid incinerator (LIC). The startup of the LIC PFS went smoothly, with no high mercury readings or additional problems.

"The PFS systems were tested extensively prior to shakedown—but that's why we have shakedown, to discover any minor problem which could not have been discovered without actually processing agent with mercury. The process is being managed as planned, with allowance in the schedule and spares on hand to deal with any problem which may arise," said Randy Fowles, EG&G PFS project manager.

The PFS startup on Oct. 14 marked the beginning of a shakedown period, which will allow operators to become more familiar with the system and determine optimum operating parameters and conditions while processing actual munitions contaminated with mercury.

Now that everything is running smoothly, the PFS will also undergo a series of planned performance tests—seven tests total—using high mercury mustard ton containers. The first planned test is the MPF Alternative Monitoring Request-Relative Accuracy Test and Audit (AMR-RATA), to demonstrate the TOCDF's capability and accuracy in monitoring MPF exhaust gas for mercury. The AMR-RATA will be followed by the MPF mini-burn, a voluntary test conducted in preparation for the MPF demonstration test before state regulatory officials in mid-November.

Similarly, both liquid incinerators will undergo an AMR-RATA, followed by a mini-burn before the LIC demonstration test for state regulators in late November—early December. State officials have agreed that performance data from the single LIC/PFS tested will be applied to the other LIC/PFS system.

Once all tests are completed and pending the go-ahead from state regulators, the HT mortar campaign will re-start in early January. The campaign kicked off back in April, but was quickly halted when higher-than-expected levels of mercury were detected in the MPF exhaust gases (the PFS was not up and running at the time). TOCDF officials suspect the source of the mercury was the silver solder used to assemble the weapons.

Upcoming Events

- **Nov. 12, 1:30 p.m.** – Utah Division of Solid and Hazardous Waste Control Board monthly meeting. The meeting will be held in Room 101 at the Department of Environmental Quality building, 168 N. 1950 W. in Salt Lake City.
- **Nov. 17, 1:00 p.m.** – DCD Restoration and Advisory Board meeting to discuss environmental clean-up activities associated with the depot. The meeting will be held at the Tooele Chemical Stockpile Outreach Office, 54 S. Main Street in Tooele.
- **Nov. 19, 6:30 p.m.** – Utah Citizens' Advisory Commission meeting. The meeting will be held at the Tooele County Emergency Management Building, 15 East 100 South, Tooele.

8 million and counting

TOCDF workers continue to improve safety record

The first day of October marked a major accomplishment for TOCDF workers as they reached and surpassed eight million consecutive man-hours—nearly four years—without a lost workday injury. Just more than two years ago, workers surpassed the previous record of 3,579,072 hours and continue toward the ultimate goal of finishing the project without another lost-time injury.

"I congratulate our workers on a great achievement," said EG&G Vice President and TOCDF General Manager Gary McCloskey. "In almost four years, we haven't had a worker lose a day of work because of an accident. That means that we're taking care of ourselves and of each other. Let's keep it going."

On Tuesday, Sept. 8, a little more than one month after the EG&G and Battelle work forces at TOCDF formally were presented with U.S. Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) Stars for safety excellence, about 185 employees formed a human star in the Engineering parking lot as a way of promoting that it's the people here who make our safety culture strong.

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